

**ABSTRACT**

5       The present invention provides a novel class of fluorescent cyanine dye compounds  
that are modified at one of the heterocyclic ring nitrogen atoms with a mobility-modifying  
moiety that permits the electrophoretic mobilities of polynucleotides labeled with the  
mobility-modifying cyanine dyes to be adjusted or tuned in a predictable fashion while  
retaining enzymatic activity. The ability to predictably tune the relative electrophoretic  
mobilities of the dyes permits the creation of sets of mobility-matched fluorescent dyes of  
a variety of structures for a variety of applications, including fluorescence-based 4-color  
10       nucleic acid sequencing reactions.